

**PATENT**  
Docket No. 22750-350

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Inventor(s): Pfeuffer

Serial No.: 08/900,254

Filing Date: July 29, 1996

For: FILTER MATERIAL, METHOD OF  
ITS MANUFACTURE, AND  
APPARATUS FOR  
MANUFACTURING FILTER  
MATERIAL



Group Art Unit: 1733

Examiner: Yao, S.

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Michael Stimson

**APPEAL BRIEF**

SIR:

On March 2, 2000, Appellant appealed from the Office Action dated October 1, 1999, finally rejecting claims 1-4 of the above-identified application. This Brief is submitted by Appellant in support of the appeal.

The Commissioner is hereby authorized to charge the appeal brief fee of \$300.00 and any additional fees which may be necessary for consideration of this paper, including any extension of time, to Kenyon & Kenyon Deposit Account No. 11-0600. A copy of this sheet is enclosed for that purpose.

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## **I. IDENTITY OF REAL PARTIES IN INTEREST**

The real party in interest is Firma Carl Freudenberg, the assignee of the entire right, title, and interest in and to this application.

## **II. RELATED APPEALS AND INTERFERENCES**

There are no related appeals or interferences.

## **III. STATUS OF CLAIMS**

Claims 1-4 are pending. Claims 1-4 stand finally rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pat. No. 4,496,583 to Yamamoto et al. in view of U.S. Pat. No. 5,232,595 to Meyer or U.S. Pat. No. 4,876,007 to Narou et al. and U.S. Pat. No. 2,862,542 to Norton.

## **IV. STATUS OF AMENDMENTS**

An amendment under Rule 116 was filed on November 23, 1999. In an Advisory Action dated December 2, 1999, the Examiner indicated that the amendment would be entered upon filing a notice of appeal and filing of an appeal brief.

## **V. SUMMARY OF THE INVENTION**

Applicant's invention is directed to a method of manufacturing a pleatable filter material. To produce the filter material, a fibrous web is formed from drawn and undrawn synthetic fibers. (p. 4, lines 33-35.) The fibrous web is then calendered between profiled calender rolls. (p. 5 lines 11-23, see also Fig. 2.) During the calendering step, the fibers are bonded together, and spacers are formed. (Id.)

To assure that the fibers are bonded during the calendering step, the calendar rolls 1 are either heatable or coolable. (p. 4, line 16.)

## **VI. ISSUE**

- I. Whether Claims 1-4 are Unpatentable Under 35 U.S.C. § 103(a) over Yamamoto in view of either Meyer or Naruo and Norton.

## **VII. GROUPING OF CLAIMS**

Group I: Claims 1-4. Arguments are presented as to why claims 2 and 3 are separately patentable.

## **VIII. ARGUMENT**

### I. Claims 1-4 are patentable over Yamamoto in view of Meyer or Naruo and Norton.

Claims 1-4 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pat. No. 4,496,583 to Yamamoto et al. in view of U.S. Pat. No. 5,232,595 to Meyer or U.S. Pat. No. 4,876,007 to Narou et al. and U.S. Pat. No. 2,862,542 to Norton. These rejections should be reversed for two reasons. First, Yamamoto et al. teaches away from applicant's invention. Second, the proposed combinations fail to disclose all of the limitations of the claims.

Yamamoto et al. discloses a method of forming a paper-like polyester sheet having an enhanced filter property, an excellent mechanical strength, and satisfactory touch and appearance. See Abstract. As the Examiner has recognized, Yamamoto et al. does not, however, disclose forming spacers in the sheet or calendering the sheet in a single calendering step to both bond the fibers and form the spacers.

The Examiner cites Meyer and Norton for the proposition that pleated filter sheets are well known in the filter art, and that the advantages of the pleated filter are obvious. The Examiner suggests that this provides sufficient motivation to combine the teachings of Yamamoto et al. and Meyer or Norton and Naruo, and that these references make up for the deficiencies of Yamamoto et al.

Contrary to the Examiner's assertion, however, Yamamoto et al. clearly teaches away from Applicant's invention. Claim 1 requires a step of calendering the fibers. Calendering the fibers naturally crimps some of the fibers. Yamamoto et al. however, teaches that crimping is undesirable. Yamamoto et al. provides several examples of its resultant products, and in some of the examples, the paper-like polyester sheets were subjected to a crimping process. Yamamoto et al. discusses the results of the crimping process, and teaches that the results of the crimping process are inferior to other uncrimped examples.

Table 2 clearly shows that in Examples 11 and 12, the crimped fibers resulted in inferior tensile strength, ultimate elongation and coefficient of air flow

resistance to those in Example 10 in which non-crimped fibers were used. Also, in Example 10, the resultant [uncrimped] paper-like sheet exhibited a satisfactory air-permeability.

Col. 7, line ~55 - Col. 8 line 2. Thus, while Yamamoto et al. may teach that the fibers can be crimped, it clearly teaches that the crimping is undesirable. Therefore, Yamamoto et al. teaches that the calendering process (which naturally crimps some fibers) is undesirable. One skilled in the art at the time the invention was made would therefore have no motivation to process the product made by Yamamoto et al. in the manner taught by either Meyer or Norton and Nauro. Therefore, one skilled in the art at the time the invention was made would have no motivation to combine the teachings of the cited references.

The Examiner has stated that in light of the teachings of Yamamoto et al., "there is a reasonable expectation of success in forming an effective corrugated filter." The Examiner has pointed to Example 11 of Yamamoto et al. to bolster that assertion, stating that "[t]he results of example 11, which illustrates a filter material using mechanically crimped fibers having about 1 crimp/inch," produces a filter within the parameters that Yamamoto et al. states is acceptable. The Examiner then concludes that because Yamamoto et al. teaches that the produced filter is *acceptable*, Yamamoto et al. teaches that the produced filter is *desirable*.

Merely showing that references *may* be combined does not satisfy the Examiner's burden. The Examiner must also show that the combination is desirable. See In re Mills, 916 F.2d 680, 682 (Fed. Cir. 1990) (Although a prior art device "may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so."). In this situation, Yamamoto et al. clearly teaches that the proposed combination would result in an inferior product. While one skilled in the art may have concluded from reading Yamamoto et al. that the filter would work, one skilled in the art would have had no motivation to produce the filter that Yamamoto et al. teaches is inferior. Therefore, the Examiner has failed to establish that there is a motivation for combining the cited references, and has failed to establish a *prima facie* case of obviousness.

Yamamoto et al.'s statement that the produced paper-like fiber sheet may be . . . calendered, embossed, or creped . . ." does not compel a different conclusion. The Examiner has pointed to this statement to support the contention that Yamamoto et al. does not teach away from Applicant's invention. In context, however, this statement does not support the Examiner's contention. The next statement Yamamoto et al. makes is that "[t]he processed

paper-like sheet can be used as a pattern sheet, a leather-like sheet, a sheet for making artificial flowers . . ." However, as discussed above, when discussing the specific process of making a sheet for filters, Yamamoto teaches away from the calendering process with profiled rolls. Accordingly, the Examiner's rejection of claims 1-4 should be reversed.

Furthermore, the Examiner has asserted that Norton would make obvious calendering the filter material of Yamamoto between corrugated calender rolls. However, claim 1 requires that during the calendering process, the undrawn fibers be bonded. This is a feature taught in neither Yamamoto or Norton, or the other references (Meyer or Naruo et al.) cited by the Examiner. Recognizing the deficiency of the prior art of record in teaching the claimed feature of bonding during calendering, the Examiner has asserted that "it is reasonably taken that, in calendering the paper-like sheet material of Yamamoto et al. using a pair of profiled calender rolls, the fibrous web is bonded in a tension-free manner ...." The Examiner's assertion of what is "reasonably taken" comes nowhere from the prior art, and instead is hindsight based on applicant's disclosure. Norton describes a process wherein a filter material is impregnated with a resin, and wherein the calendering rolls are treated with a resin-solvent vapor. It is respectfully submitted that the process of Norton, which uses an injected resin material and calendar rolls which are modified so as to be usable with a resin-impregnated material are inapplicable to Yamamoto, and do not provide any form of teaching for bonding during the calendering process. The Examiner has failed to provide any proper teaching, suggestion or motivation in any of the cited prior art for this feature of claim 1, and therefore the rejection of claims 1-4 is improper and must be withdrawn.

With respect to claims 2 and 3, these claims detail a preheating of the fibrous web and passing the web between heated or cooled calender rolls. The Examiner has failed to demonstrate where in any of the prior art these features may be found. The Examiner has instead asserted that these limitations are "based on common sense and logic without any specific suggestion in the prior art." It is respectfully asserted that Yamamoto, alone or in combination with the other references, does not suggest that the limitations in claims 2 and 3.

**IX. CONCLUSION**

For the foregoing reasons, it is respectfully submitted that the Examiner's rejections of claims 1-4 are in error and must be reversed.

Respectfully submitted,  
KENYON & KENYON

Dated: 4/3/00

By: Michael Stimson  
Michael E. Stimson  
(Reg. No. 41,333)

KENYON & KENYON  
One Broadway  
New York, NY 10004  
Tel: (212) 425-7200